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MAPS OF PERCENTAGE FREQUENCIES OF VERY DRY, MODERATE, AND VERY WET MONTHS

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THE following 36 maps show the percentages of each month which have precipitations of less than 1 inch, of 2 to 4 inches, and of 5 inches or more, respectively. They are based on the State average records for 55 years, 1886–1940, given in 12 tables in J. B. Kincer's *Normal Weather for the United States*, Weather Bureau, Washington, 1943.

Although Kincer's 36-page publication presents many more details than do these maps, the maps are justified because they make conspicuous highly significant data on the relative frequency of exceptionally dry and exceptionally wet months and also reveal how often moderate amounts (2 to 4 inches) are received. They call attention to Kincer's valuable publication, which tabulates also the frequencies of precipitation totals of 1–1.99, 2–2.99, 3–3.99, 4–4.99 inches, and presents for each month four maps, of average temperature and precipitation by States, of lowest temperature, and of average number of days with minima of zero or lower.

A monthly precipitation of less than one inch means an arid condition except in months that are cold. Conversely, a monthly precipitation of 5 inches or more indicates a highly humid condition, except in months that are hot. Thus, 24 of these maps suggest the frequency of aridity and of super-humidity.

The other 12 maps show the relative frequency of months which have more moderate amounts of precipitation (2 to 4 inches). To be sure, in dry regions a monthly precipitation of nearly 4 inches is far above average, and hence not "moderate," and, conversely, in humid regions a monthly total of 2 inches is relatively dry, but as a compromise, 2 to 4 may be classed as moderate.

The numeral within each State is the percentage for that state as given by Kincer. The New England States are combined, as are Delaware and Maryland. The isolines and shading, while doubtless subject to criticism at various points, make the data much more readily visible, and hence increase their utility.

FREQUENCIES OF DRY MONTHS (STATE AVERAGES OF LESS THAN ONE INCH)

Map 1 (January) shows that during this month most of the East and Pacific Northwest nearly always receive more than 1 inch of precipitation, while much of the west-central part of the country receives less than 1 inch during more than half of the Januaries. North Dakota has a January precipitation of less than 1 inch in 95 percent of the years. Nebraska is second in dryness, with 91 percent of the Januaries receiving less than 1 inch.

Map 2 (February) reveals some interesting contrasts to January. The eastern and northwestern areas, always receiving more than 1 inch, are much reduced. Also reduced is the region with many dry Februaries. South Dakota slightly exceeds North Dakota in the frequency of dry Februaries.

Map 3 (March) reveals that in only 1 year, in the 55 studied, did most of the eastern third of the country receive less than 1 inch of precipitation while in a large southwestern region and in a sizeable north-central one more than half of the years were that dry. North Dakota was most often that dry, followed by New Mexico.

Map 4 (April) reveals that precipitation totals of less than 1 inch are far less common than in March or in the winter, except in the Southwest. They are almost lacking in the East, except part of the Southeast. They are most frequent in Arizona and Nevada, 89 and 71 percent, respectively.

Map 5 (May) reveals an increase in the East and West in the frequency of excessively dry Mays and a decrease in the central zone. In Arizona 98 percent of the Mays receive less than 1 inch, in Navada 67 percent. The least arid part of the country in this month extends from Kansas to the Atlantic coast and from Tennessee to Wisconsin.

Map 6 (June) reveals that in nearly all of the eastern half of the country at least 1 inch of precipitation is received in June, but that in California and Arizona 95 percent of the Junes receive less than 1 inch.

Map 7 (July) shows an eastern migration of the line of "no month with a State average of less than 1 inch." The eastward shift is most notable in the northern half of the country. However, almost to the Rockies less than one July in 20 receives less than an inch of rain. In California and Nevada by contrast, 100 percent and 98 percent, respectively, of the Julies receive less than one inch. In Oregon and Idaho the percents are 87 and 85, respectively. New Mexico, however, is no oftener arid than is Arkansas.

Map 8 (August) indicates little change from July except that Minnesota and Iowa are far less often dry in August than in July while Michigan more often is very dry in August than in July. This suggests an increasing influence of the Great Lakes in checking thunderstorms.

Map 9 (September) shows increased aridity in the Corn Belt, Southeast and Southwest, except for California. In the eastern half of the country fewer than one-tenth of the Septembers receive less than 1 inch of rain while in a large western region more than half of them are this dry.

Map 10 (October) shows a notable decrease in the frequency of precipitation totals of less than 1 inch on the Pacific slope but an increase in most of the rest of

the country. Only New England and Florida have had only 1 year so dry in the 55 years studied. More than half of the years are as dry in the Great Plains and southern Rocky Mountain region.

Map 11 (November) extremely dry Novembers are not very rare in much of the East (2–20 percent of the years) and are normal (occuring in half the years) in a large central zone. They occur 93 percent of the time in Colorado and 87 percent in North Dakota. Washington, however, has such November averages only 3 percent of the time.

Map 12 (December) reveals a general lack of aridity in the East and Northwest, but that in a large central region three-fourths of the years or more receive a State average of less than 1 inch. North Dakota is driest (93 percent) followed closely by South Dakota (89 percent).

FREQUENCY OF VERY WET MONTHS (STATE AVERAGES OF FIVE INCHES OR MORE)

Maps 13–24 present the frequencies of months during which 5 inches or more of precipitations occur—State averages.

During January (map 13) most of the country did not have State averages of 5 inches once in the 55 years studied. However, a sizable area centering in Mississippi had such wet Januaries 40 percent of the time. A Pacific Coast belt was about equally wet.

During February (map 14) precipitation totals of 5 inches or more are distinctly more frequent than in January, despite the fact that February has about one-tenth fewer days than January. The area which is this wet during half of the years is slightly to the east of the area which was wettest during January.

During March (map 15), precipitation totals of 5 inches or more for State averages continue to be lacking in most of the country. However in the Southeast, they are somewhat more frequent than in February, where from 18 to 60 percent of the Marches are that wet.

April (map 16) is more often wet than is March in the Midwest and Southern Plains regions. However, in the Pacific States and in the South Atlantic States such very wet months are distinctly less common than during March.

May (map 17) reveals that totals of 5 inches are lacking only in the western third of the country while they occur oftener than 1 year in 10 in most of the eastern half. More than a third of the Mays are this wet in an area extending from Missouri to Mississippi.

June (map 18) is distinctly less frequently very wet than is May, except in the western third of the country, where 5 inches is unknown as a State average. Very wet Junes are most common in Florida (84 percent of the years) and occur in about a third of the years in an extensive southeastern belt and in Missouri and Iowa.

July (map 19) is very wet less often than is June in the northern and central parts of the country but is more often wet in the Southeast and in Arizona. Florida receives 5 inches in July during 95 percent of the Julies and North Carolina and Louisiana in 71 percent.

August (map 20) receives 5 inches of rain distinctly less often than does July, except in Florida, where the decline is moderate (89 percent instead of 95).

September (map 21) is less often very wet than is August, except in an area extending from Wisconsin to Texas. In most of the Southeast, totals of 5 inches or more are less than half as frequent as in August.

During October (map 22), totals of 5 inches or more appear in the Pacific States which have lacked such State averages since April. They are lacking in about half of the country and are rather rare elsewhere, except near the Atlantic coast.

November (map 23) is decidedly more often very wet in the Western States and in the Mississippi Valley than is October. Along the Atlantic coast south of New England, however, November is much less often very wet than is October.

December (map 24) closely resembles January in the frequency of totals of 5 inches or more. However, such totals are distinctly less common in December than January in most of the wettest section (Arkansas to Florida). In about half of the country no December of the 55 studied had a State average of 5 inches or more. Only one December had such a total in New York, Ohio, and Missouri.

FREQUENCY OF MONTHS WITH 2 TO 4 INCHES OF PRECIPITATION

Maps 25–36 present the frequencies of months which receive a somewhat moderate amount of precipitation, amounts adequate, or nearly adequate, for most crops; conversely, flooding is not common with monthly totals of less than 4 inches, except locally during the cooler months.

Map 25 shows that in January only about one-sixth of the country ever receives less than 2 inches of precipitation (State average) while nearly two-thirds of it receives 2 to 4 inches during at least a third of the Januaries. These totals are most frequent in the Northeast.

During February (map 26) the frequency of totals of 2 to 4 inches is similar to that during January. The Midwest and much of the Southeast, however, show a decline.

March (map 27) nearly always receives 2 inches or more of precipitation in all parts of the country. Only one March in 55 was that dry in the driest States during that month, North Dakota and Montana. More than 40 percent of the Marches receive 2 to 4 inches in most of the East and the Pacific Coast States.

April (map 28) has an increased frequency of moderate wetness in the eastern two-thirds of the country, especially large in the north-central section. A decline is evident in the Southwest and near the Pacific.

During May (map 29), the Southwest receives 2 inches in less than one-tenth of the years, while 2 to 4 inches is received in about half of the years in most of the northeastern quarter of the country.

June (map 30) always receives in the Southwest less than 2 inches of rain (State average). In the northern half of the country east of the Rockies, however, totals of 2 to 4 inches are normal, occur in about half of the years.

July (map 31) reveals a northward extension of the dry Southwest to include the Northwest. However, Arizona and New Mexico much more frequently receive 2 to 4 inches in July than in June. The Southeast is much least likely to receive these moderate totals than is any other part of the eastern half of the country. (Florida had only one such July in the 55 studied.)

During August (map 32) moderate totals of rainfall (2–4 inches) are less common in the Northeast than in July, but occur in about half of the years. They are more frequent in a sizable western area in August than in July, where they occur in 0 to 10 percent of the years.

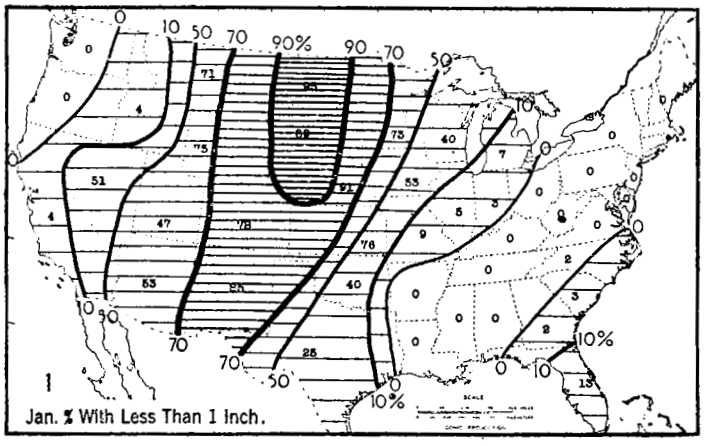
Map 33 (September) differs much more from August than August differs from July. Moderate totals of precipitation are only about half as frequent in the Southwest

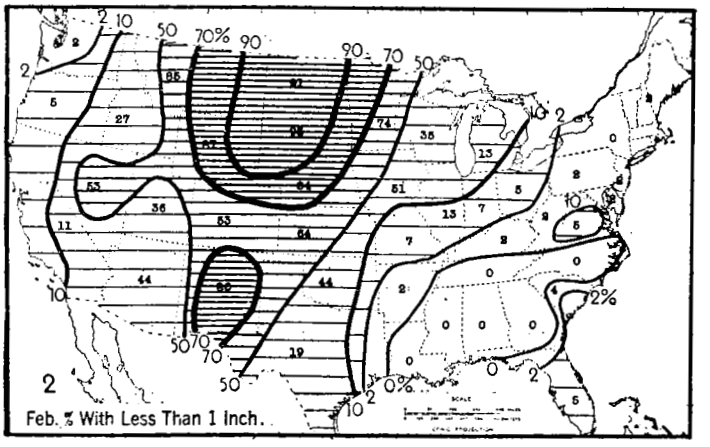
in September as in August but are many times more frequent in the Northwest. In most of the northeastern quarter from 50 to 70 percent of the Septembers have such totals.

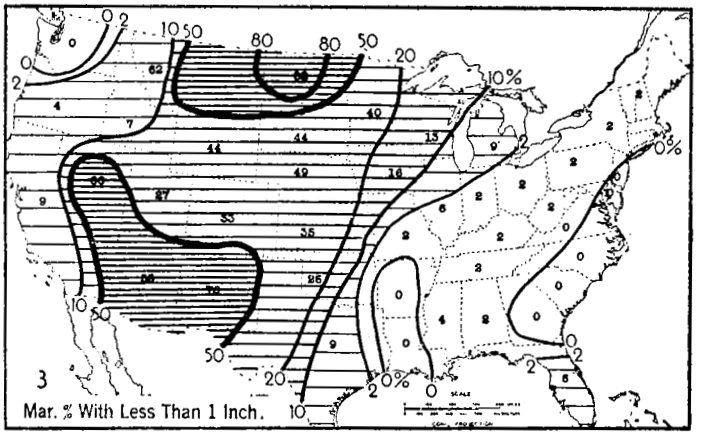
October (map 34) has moderate totals of rainfall in 20–60 percent of the years in most of the country. Nevada and Montana, however, had such totals only once, or not at all, in the 55 years.

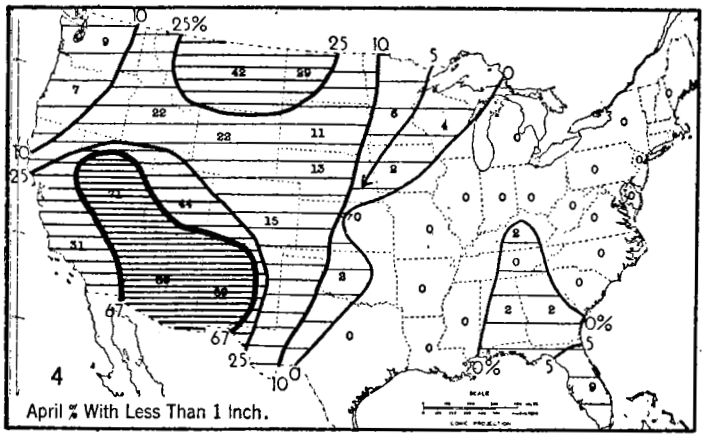
November (map 35) receives 2–4 inches during less than one-tenth of the years in a large western region but receives them in 35 to 70 percent of the years in most of the eastern. Such a total is most common in Michigan (71) and New York (67).

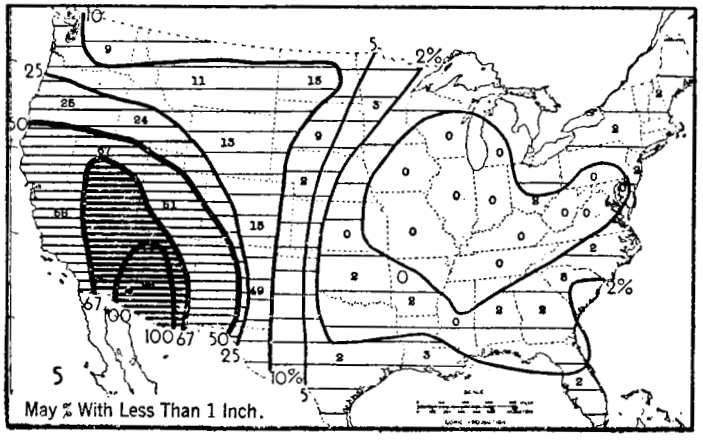
The final map (36), shows that in December, two sizable areas, one in the Dakotas and the other in New Mexico, never receive as much as 2 inches of precipitation as State averages. The Pacific States and most of the eastern half of the country receive such totals in 20 to 75 percent of the years. Such totals are most frequent in New York (76).

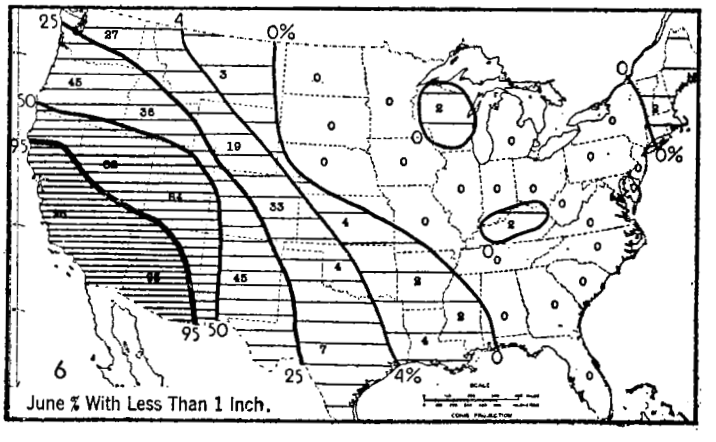


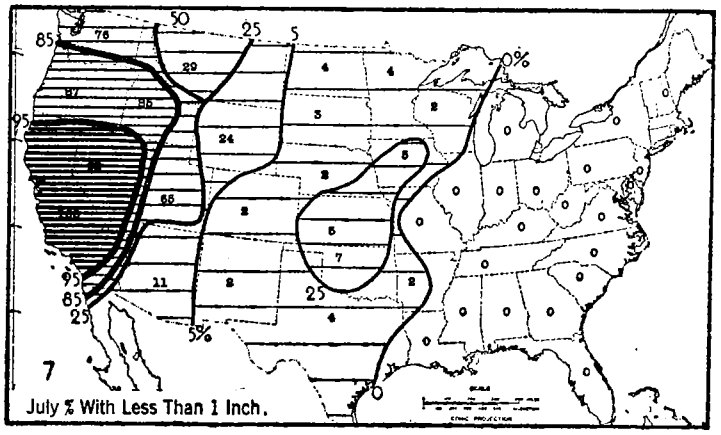








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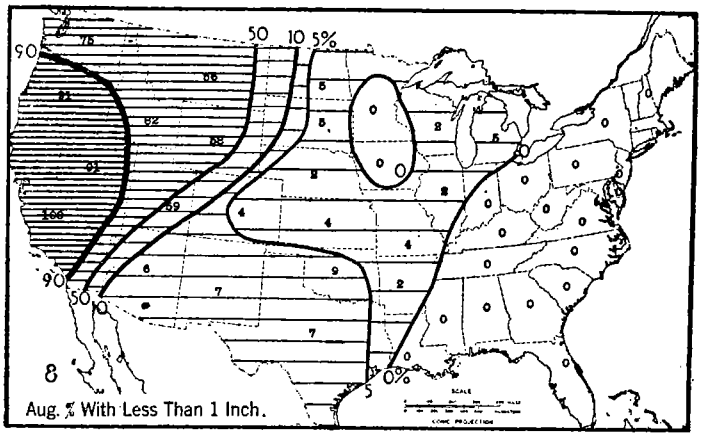
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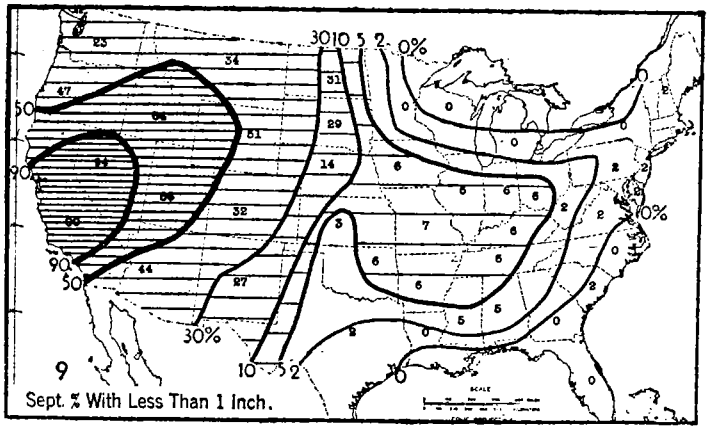
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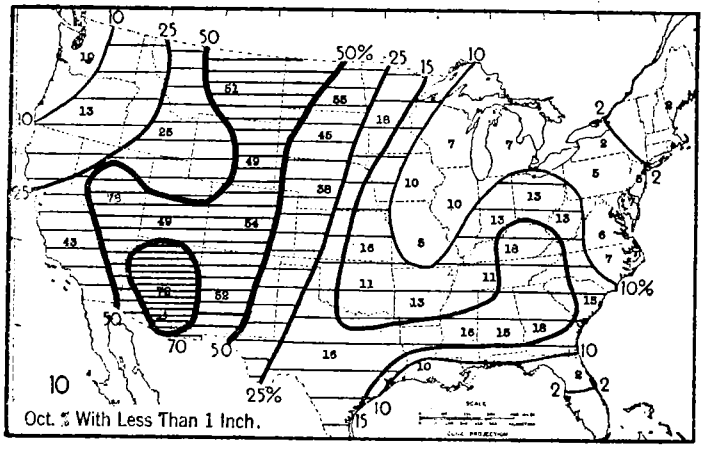
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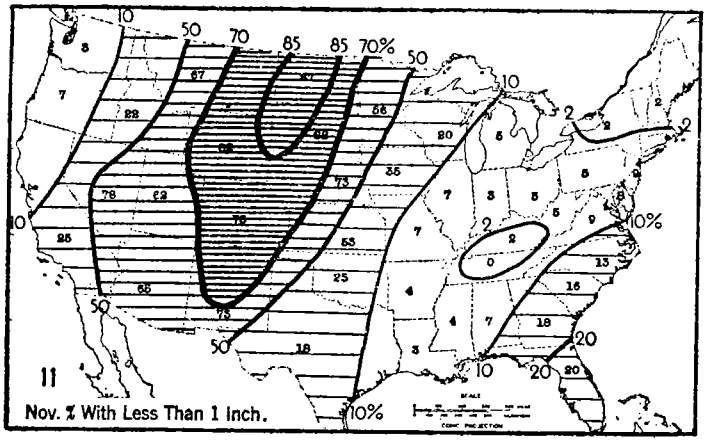
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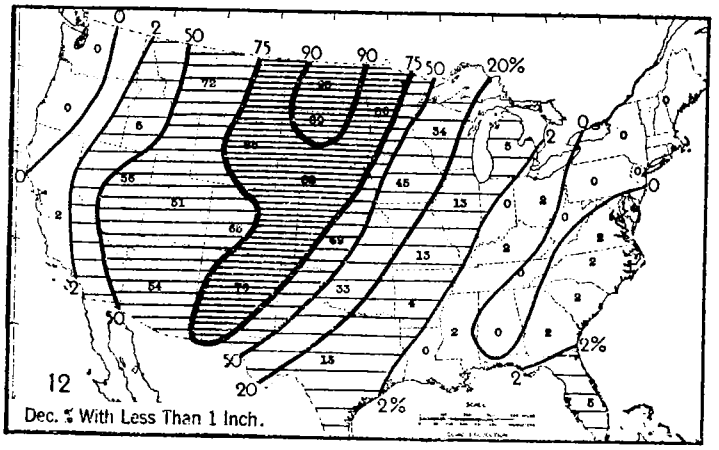
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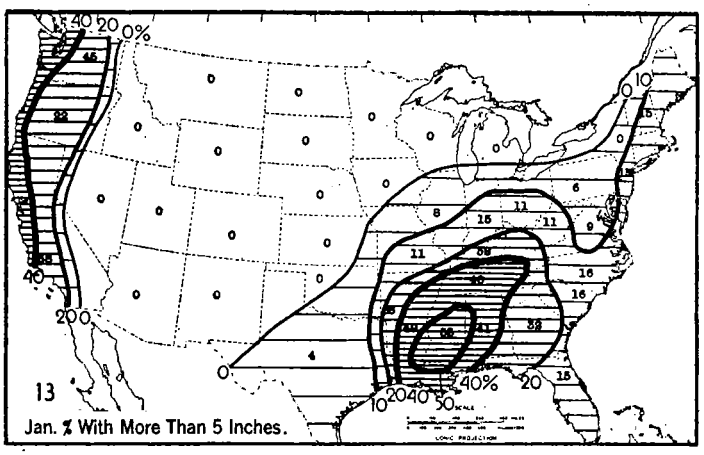
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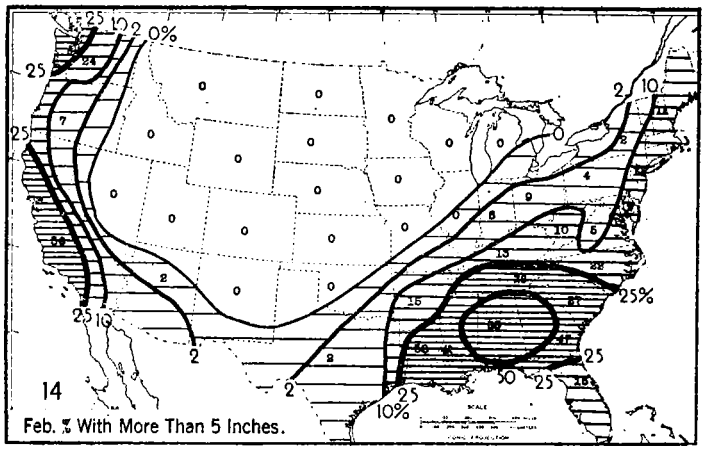
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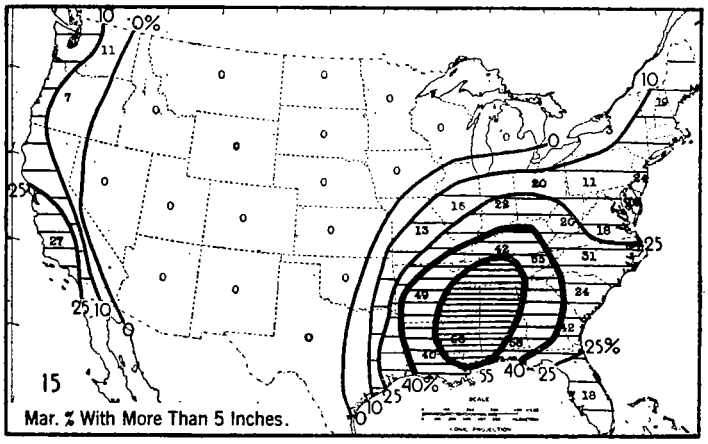
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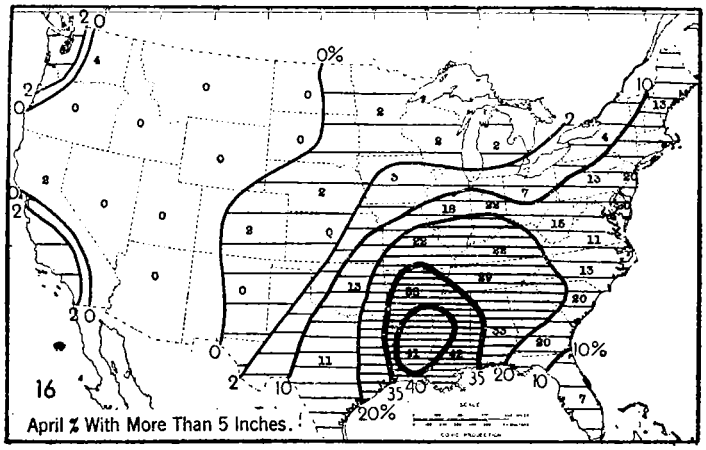
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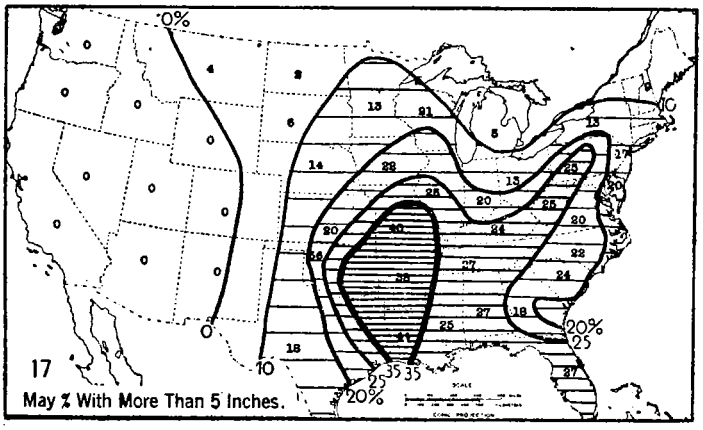
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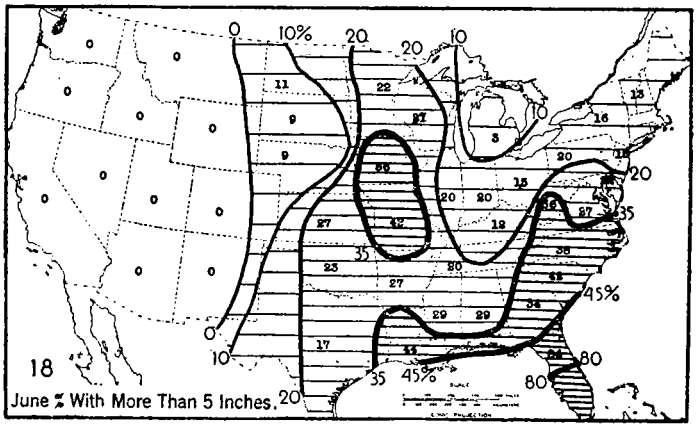
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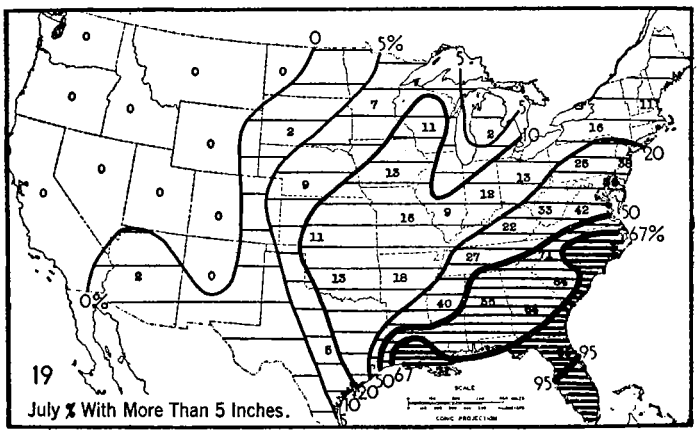
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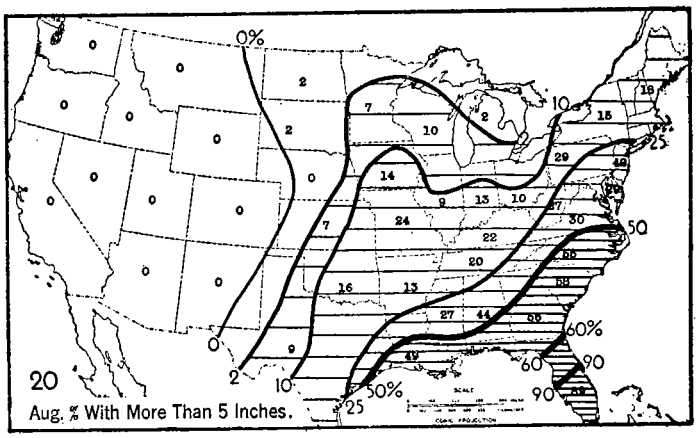
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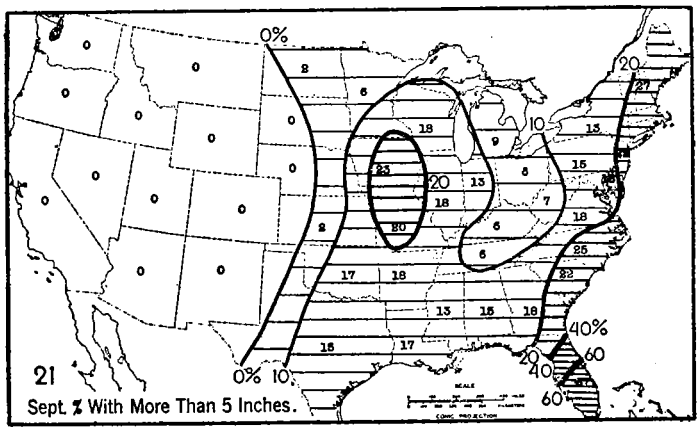
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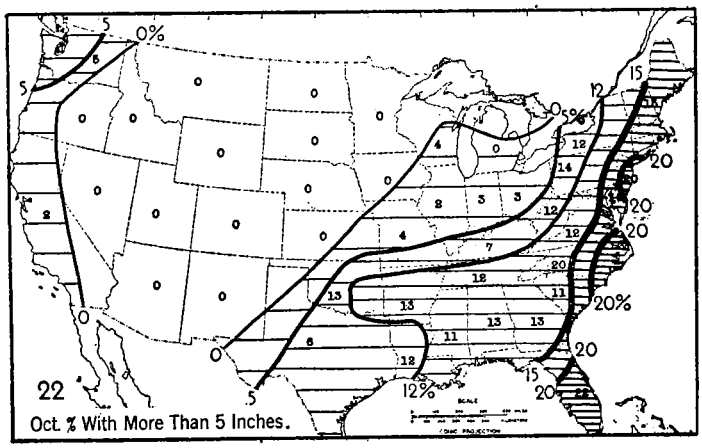
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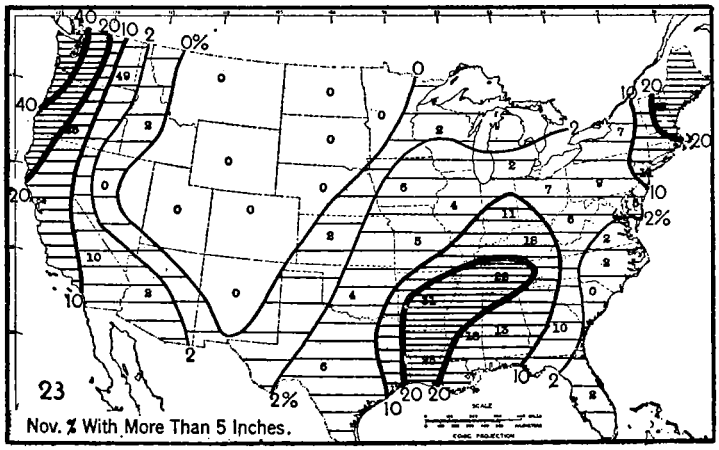
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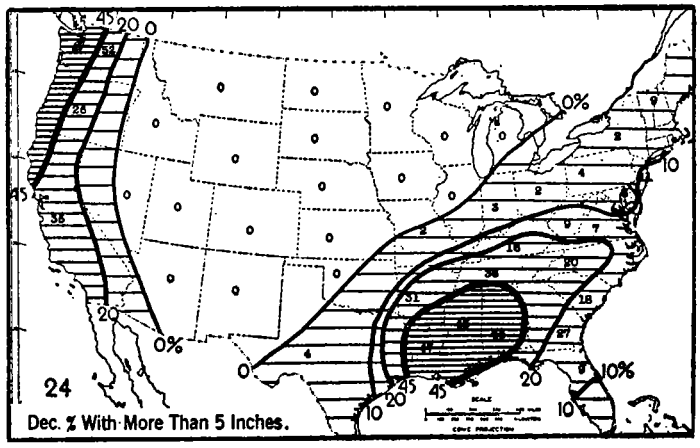
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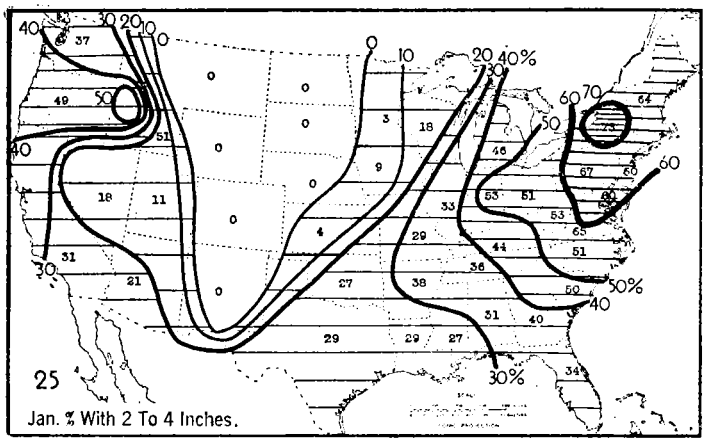
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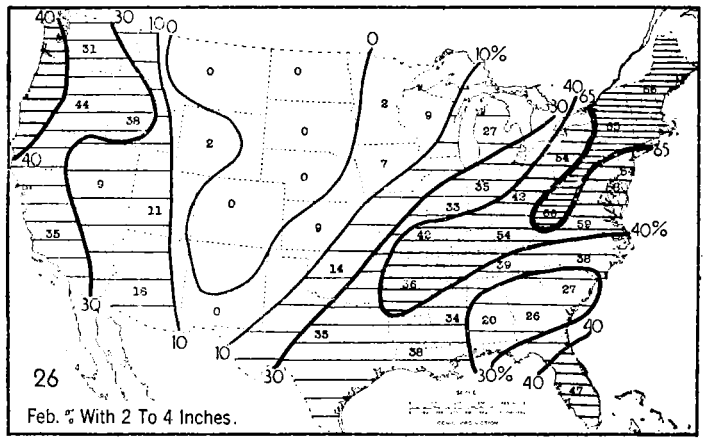
Jan. % With 2 To 4 Inches.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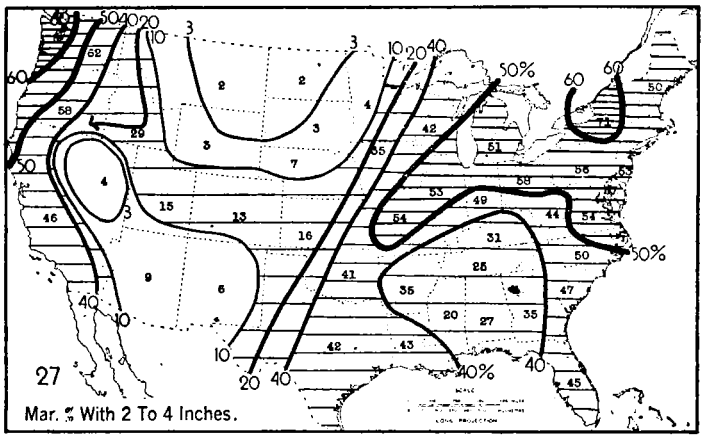
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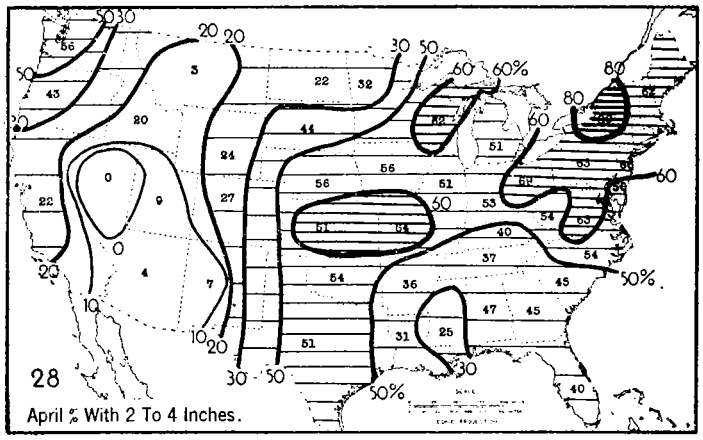
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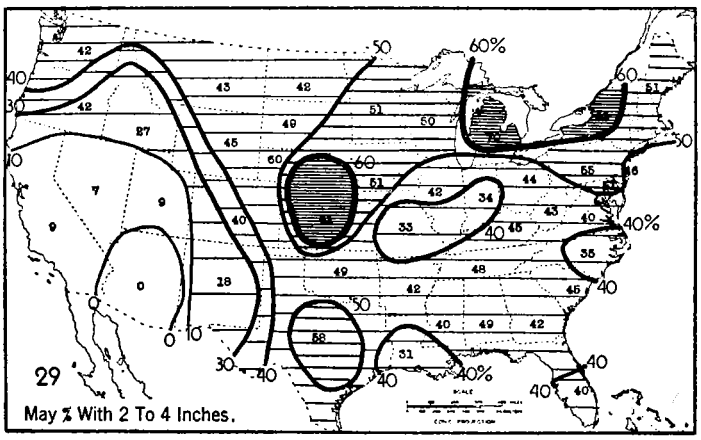
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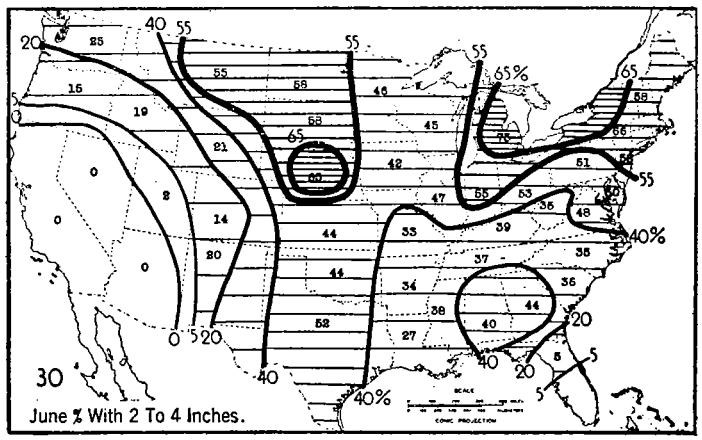
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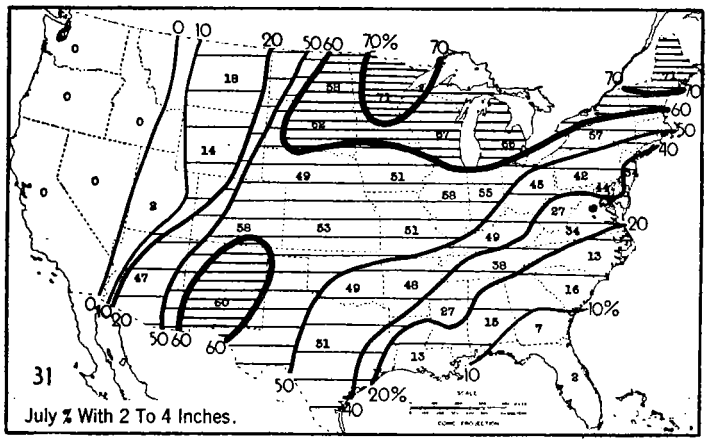
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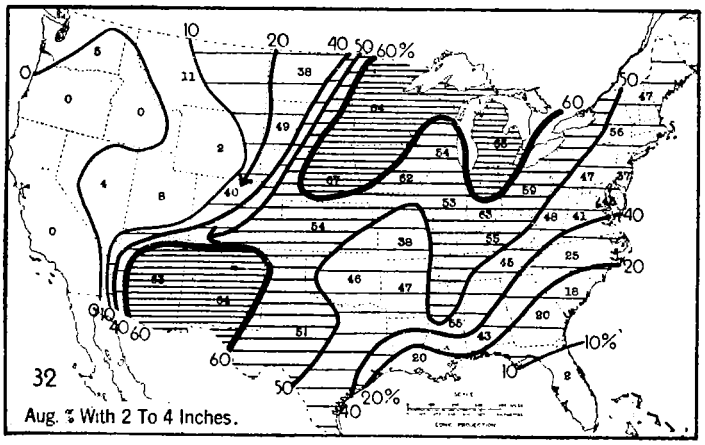
July % With 2 To 4 Inches.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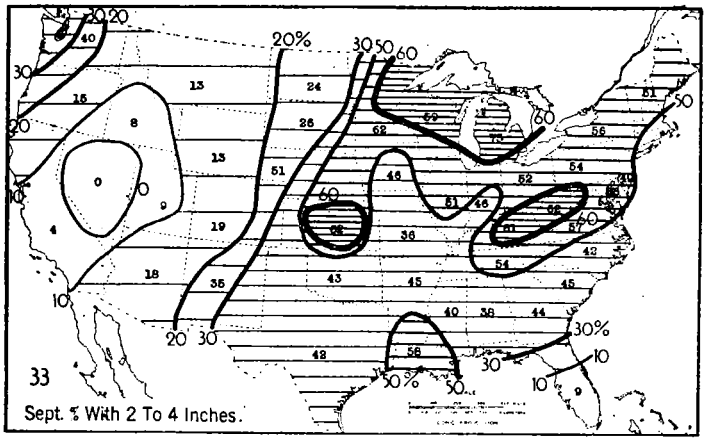
Aug. % With 2 To 4 Inches.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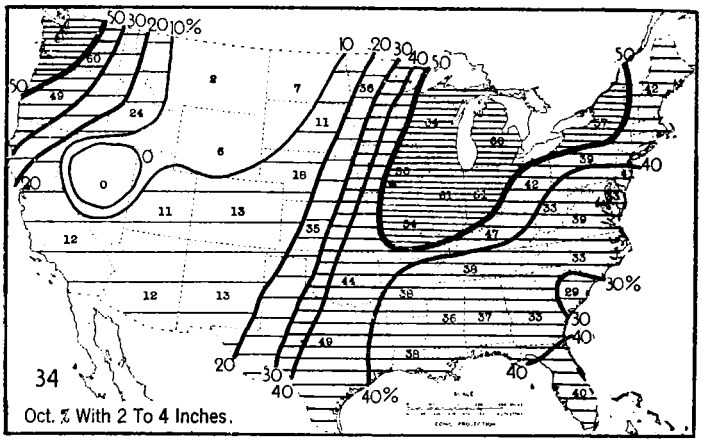
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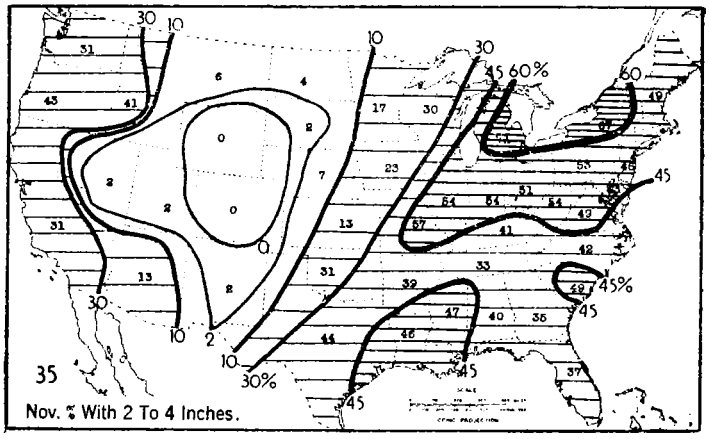
Oct. % With 2 To 4 Inches.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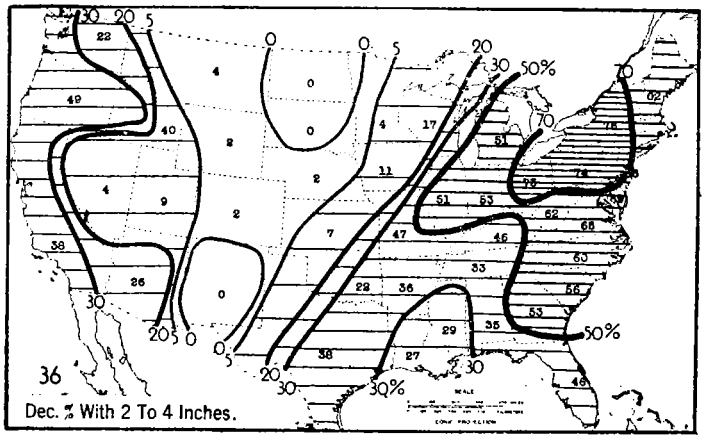
Nov. % With 2 To 4 Inches.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Dec. % With 2 To 4 Inches.